

Description:

Metaforce is a highly reactive manufactured pozzolan that improves performance and durability of mortars and concretes made of Portland cement. It is compliant with the Mexican Standard NMX-C-146 and with the ASTM C-618 (class N pozzolan). Metaforce is an aluminosilicate produced under strict quality control standards, which reacts with the calcium hydroxide generated during the cement hydration, creating compounds with cementitious value.

Uses and Applications:

Metaforce, used in addition or substitution of Portland cement in mortars, massive and structural concrete, contributes to:

- Improve compressive strength from 7 days and improve the elastic modulus from 28 days
- Reduce permeability
- Improve sulfate resistance
- Mitigate efflorescence
- Mitigate the alkali-silica reaction

Physical properties:

Color	Light Brown
Alkali-aggregate reaction mitigation at 16 days (%)	>90
Pozzolanic activity index at 28 days (%)	115 - 125
Water requirement, control %	105 - 110
Sulfate resistance at 180 days (%)	<0.04 (10% subst.) <0.03 (15% subst.)
Density (g/cm ³)	2.65 - 2.68
Alkali as Na ₂ O (%)	< 0.4
SO ₃ (%)	< 1.2
LOI (%)	< 3.0
SiO ₂ (%) + Al ₂ O ₃ (%) + Fe ₂ O ₃ (%)	87 - 92
Chloride ion penetration 6m	Low (10-15% subst.)
Chloride ion penetration 12m	Very low (10-15% subst.)

Note: Values have been obtained in controlled laboratory conditions and may vary according to the environmental conditions.

Advantages:

Unlike silica fume, Metaforce does not necessarily require high range water reducing additives.

Recommendations for use:

For better results, dosage by weight is advised.

If high range water reducers are used in the mortar and cement mixes, laboratory testing is advised for better results.

Although Metaforce does not have cementitious properties, avoiding contact with water is advised.

Recommendations for transport:

- Remove from platforms nails or materials that may damage the bags.
- Use belts or bands to secure the bags; if ropes are used, place protectors in the friction surfaces.
- When using a service lift observe that the blades do not harm the pallets nor the bags.
- To lift or move a bag, it must be taken from below with both arms.

Recommendations for storage

- Cover the bags, store them in dry places and avoid long storage periods (more than 3 months.)
- Place the bags preferably on pallets or clean, flat surfaces.
- Avoid nails or broken pallets.
- Use the bags that have been in storage the longest.
- Arrange in piles, leave 2 inches of space inbetween each pile.

Available in:

- 25 and 50 lb. bag
- Bulk

Precautions:

The use of the appropriate glasses, gloves and mask is advised. Wash the exposed parts of the skin with water. If any dust gets into the eyes, flush immediately and repeatedly with water for 10 minutes and get prompt medical attention.

The specifications and properties of this product are not limited. If you require any special characteristics please contact GCC Technical Assistance to get further guidance.